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L6 ANSWER 1 OF 11 USPATFULL
AB Silicon beads are produced by chemical vapor deposition (CVD) on seed particles generated internal to a CVD reactor. The reactor has multiple zones, including an inlet zone where beads are maintained in a submerged spouted bed and an upper zone where beads are maintained in a bubbling fluidized bed. A tapered portion of the upper zone segregates beads by size. Systems for inspecting, sorting and transporting product beads are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 1998:115257 USPATFULL
TI Silicon deposition reactor apparatus
IN Lord, Stephen M., Encinitas, CA, United States
Milligan, Robert J., Moses Lake, WA, United States
PA Advanced Silicon Materials, Inc., Moses Lake, WA, United States (U.S. corporation)
PI US 5810934 19980922
AI US 4870085 19950607 (8)
RLI Continuation of Ser. No. 481801, filed on 7 Jun 1995
DT Utility
FS Granted
EXNAM Primary Examiner: Bueker, Richard
LREP Klarquist Sparkman Campbell Leigh & Whinston, LLP
CLMN Number of Claims: 28
ECL Exemplary Claim: 1
DRWN 14 Drawing Figure(s); 6 Drawing Page(s)
LN.CNT 3020
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 11 USPATFULL
AB Silicon beads are produced by chemical vapor deposition (CVD) on seed particles generated internal to a CVD reactor. The reactor has multiple zones, including an inlet zone where beads are maintained in a submerged spouted bed and an upper zone where beads are maintained in a bubbling fluidized bed. A tapered portion of the upper zone segregates beads by size. Systems for inspecting, sorting and transporting product beads are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 1998:101432 USPATFULL
TI Method for silicon deposition
IN Lord, Stephen M., Encinitas, CA, United States
Milligan, Robert J., Moses Lake, WA, United States
PA Advanced Silicon Materials, Inc., Moses Lake, WA, United States (U.S. corporation)
PI US 5798137 19980825
AI US 1995-481801 19950607 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Beck, Shrive; Assistant Examiner: Meeks, Timothy
LREP Klarquist Sparkman Campbell Leigh & Whinston, LLP
CLMN Number of Claims: 35
ECL Exemplary Claim: 1
DRWN 14 Drawing Figure(s); 6 Drawing Page(s)
LN.CNT 3117
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 11 USPATFULL
AB An improved reactor for a high-temperature deposition reaction on seed

particles is constructed with a fluidized bed which is divided into a heating zone and a reaction zone by a partition. Seed particles in the heating zone are fluidized by a carrier gas and are heated by microwaves. On the other hand, the reaction zone for the deposition reaction, through which reaction gases pass, is heated by particle mixing between the reaction zone and the upper section of the heating zone. Subsequently, a desired reaction temperature at the reaction zone is maintained stable without deteriorating the microwave heating of the heating zone.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 95:5754 USPATFULL
TI Fluidized bed reactor heated by microwaves
IN Kim, Hee Y., Daejeon, Korea, Republic of
Song, Yong M., Daejeon, Korea, Republic of
Jeon, Jong Y., Daejeon, Korea, Republic of
Kwon, Dae H., Daejeon, Korea, Republic of
Lee, Kang M., Daejeon, Korea, Republic of
Lee, Jae S., Daejeon, Korea, Republic of
Park, Dong S., Daejeon, Korea, Republic of
PA Korea Research Institute of Chemical Technology, Daejeon, Korea, Republic of (non-U.S. corporation)
PI US 5382412 19950117
AI US 1993-55239 19930428 (8)
RLI Continuation-in-part of Ser. No. US 1992-967100, filed on 27 Oct 1992, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Santiago, Amalia L.
LREP Jordan and Hamburg
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 1047
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 11 USPATFULL
AB An improved method is provided for the deposition of high-purity silicon on silicon particles from silicon source gases in a fluidized bed reactor which is divided into a heating zone and a reaction zone by a partition. Silicon particles in the heating zone are fluidized by a carrier gas such as hydrogen and are heated by microwaves. On the other hand, the reaction zone for the deposition of silicon, through which reaction gases including the silicon source pass, is heated by particle mixing between the reaction zone and the upper section of the heating zone. Subsequently, a desired reaction temperature at the reaction zone is maintained stable without deteriorating the microwave heating of the heating zone.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 94:110560 USPATFULL
TI Heating of fluidized bed reactor by microwaves
IN Kim, Hee Y., Daejeon, Korea, Republic of
Song, Yong M., Daejeon, Korea, Republic of
Jeon, Jong Y., Daejeon, Korea, Republic of
Kwon, Dae H., Daejeon, Korea, Republic of
Lee, Kang M., Daejeon, Korea, Republic of
Lee, Jae S., Daejeon, Korea, Republic of
Park, Dong S., Daejeon, Korea, Republic of
PA Korea Research Institute of Chemical Technology, Daejeon, Korea, Republic of (non-U.S. corporation)
PI US 5374413 19941220

AI US 1993-55240 19930428 (8)
RLI Continuation-in-part of Ser. No. US 1992-967100, filed on 27 Oct 1992, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Santiago, Amalia L.
LREP Jordan and Hamburg
CLMN Number of Claims: 23
ECL Exemplary Claim: 14
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)
LN.CNT 1033
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 5 OF 11 USPATFULL
AB Embodiments of magnetoplasmadynamic processors are disclosed which utilize specially designed cathode-buffer, anodeionizer and vacuum-insulator/isolator structures to transform a working fluid into a beam of fully ionized plasma. The beam is controlled both in its size and direction by a series of magnets which are mounted in surrounding relation to the cathode, anode, vacuum insulator/isolators and plasma beam path. As disclosed, the processor may be utilized in many diverse applications including the separation of ions of differing weights and/or ionization potentials and the deposition of any ionizable pure material. Several other applications of the processor are disclosed.

AN 94:107832 USPATFULL
TI Magnetoplasmadynamic processor, applications thereof and methods
IN Cann, Gordon L., Laguna Beach, CA, United States
PA Celestech, Inc., Irvine, CA, United States (U.S. corporation)
PI US 34806 19941213
US 4682564 19870728 (Original)
AI US 1992-879560 19920504 (7)
US 1983-512728 19830711 (Original)
RLI Continuation of Ser. No. US 1989-387977, filed on 28 Jul 1989, now abandoned which is a continuation-in-part of Ser. No. US 1980-210241, filed on 25 Nov 1980, now abandoned
DT Reissue
FS Granted
EXNAM Primary Examiner: Owens, Terry J.
LREP Weil, Gotshal & Manges
CLMN Number of Claims: 109
ECL Exemplary Claim: 108
DRWN 31 Drawing Figure(s); 22 Drawing Page(s)
LN.CNT 3197

L6 ANSWER 6 OF 11 USPATFULL
AB A system for setting an analysis condition for a thermal analysis of a fluid inside an apparatus, wherein a gas flow-in temperature in the apparatus, a gas flow-in rate, and an apparatus outer wall temperature are set as critical conditions, the interior of the apparatus being under a high pressure atmosphere and heated by a heater, an analysis mesh shape, a pressure inside the apparatus and other values, and a heater power, are set as initial values, and a simulation is carried out so that an optimum operating condition is obtained, wherein the relationship between heater power by which a heater monitoring temperature is maintained at a constant value and a gas flow rate at the entrance while changing the apparatus internal pressure is obtained by a trial experiment, and the simulation is carried out by changing the gas flow rate at the entrance in accordance with the heater power and the gas flow rate at the entrance set as the initial value.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 92:84556 USPATFULL
TI System for setting analysis condition for a thermal analysis of a fluid inside an apparatus
IN Ishida, Masanobu, Yokohama, Japan
Yamaguchi, Yukio, Kawasaki, Japan
Orito, Fumio, Abiko, Japan
Katano, Kizuku, Tsukuba, Japan
Okada, Hideo, Chikushino, Japan
Yajima, Fumikazu, Inashiki, Japan
PA Mitsubishi Kasei Polytec Company, both of, Japan (non-U.S. corporation)
Mitsubishi Kasai Corporation, both of, Japan (non-U.S. corporation)
PI US 5154795 19921013
AI US 1990-535769 19900611 (7)
PRAI JP 1989-149240 19890612
JP 1990-51337 19900302
DT Utility
FS Granted
EXNAM Primary Examiner: Kunemund, Robert
LREP Burgess, Ryan & Wayne
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 11 Drawing Figure(s); 7 Drawing Page(s)
LN.CNT 733
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 7 OF 11 USPATFULL
AB In a process for growing enzyme crystals, small crystals are continuously removed from a crystallizer, dissolved and returned to the crystallizer to maintain a supersaturated state. The method permits the growing of large crystalline enzymes of uniform size of about 0.5 to 1 mm. Solid materials can be coated with crystalline enzymes by placing a solid material in the crystallizer such that crystals deposit on the solid material. The process is preferably used to produce crystalline glucose isomerase.

AN 92:46977 USPATFULL
TI Method for producing crystalline glucose isomerase
IN Visuri, Kalevi, Kantvik, Finland
PA Stabra AG, Zug, Switzerland (non-U.S. corporation)
PI US 5120650 19920609
AI US 1989-421137 19891013 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Naff, David M.
LREP Passe, James G.
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 754

L6 ANSWER 8 OF 11 USPATFULL
AB The present invention is directed to an improved process for producing ultra high purity polycrystalline silicon which process provides for increased production capacity and electrical power efficiency. The process comprises recycling the exhaust gases of the silane pyrolysis reactor after the gases have been preferably first cooled and filtered utilizing a pocket-type reaction zone enclosure having a particular effective radius thereby effectively decreasing the amount of silicon powder formation. Preferably, the rate of recycle flow is sufficient to entrain silicon powder in the reactor and remove the powder from the reactor with the exiting exhaust gases.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 89:34221 USPATFULL
TI Process for the production of ultra high purity polycrystalline silicon
IN Breneman, William C., Sistersville, WV, United States
Flagella, Robert N., Ridgefield, WA, United States
Gaston, Jon M., Montreal, Canada
Hagan, David W., Vancouver, WA, United States
PA Union Carbide Corporation, Danbury, CT, United States (U.S. corporation)
PI US 4826668 19890502
AI US 1987-62256 19870611 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Dixon, Jr., William R.; Assistant Examiner: Griffis, Andrew
LREP Reinisch, Morris N.
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 20 Drawing Figure(s); 20 Drawing Page(s)
LN.CNT 895
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 9 OF 11 USPATFULL
AB Embodiments of magnetoplasmadynamic processors are disclosed which utilize specially designed cathode-buffer, anodeionizer and vacuum-insulator/isolator structures to transform a working fluid into a beam of fully ionized plasma. The beam is controlled both in its size and direction by a series of magnets which are mounted in surrounding relation to the cathode, anode, vacuum insulator/isolators and plasma beam path. As disclosed, the processor may be utilized in many diverse applications including the separation of ions of differing weights and/or ionization potentials and the deposition of any ionizable pure material. Several other applications of the processor are disclosed.

AN 87:53002 USPATFULL
TI Magnetoplasmadynamic processor, applications thereof and methods
IN Cann, Gordon L., 17751-F Sky Park East, Irvine, CA, United States 92714
PI US 4682564 19870728
AI US 1983-512728 19830711 (6)
RLI Continuation-in-part of Ser. No. US 1980-210241, filed on 25 Nov 1980, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Silverberg, Sam
LREP Sherman and Shalloway
CLMN Number of Claims: 89
ECL Exemplary Claim: 1
DRWN 31 Drawing Figure(s); 22 Drawing Page(s)
LN.CNT 2941

L6 ANSWER 10 OF 11 USPATFULL
AB The invention pertains to growth of silicon bodies from a melt and comprises enveloping the liquid/solid interface with a mixture of an inert gas and more than a trace amount of a carbon-containing gas. The carbon-containing gas may be a compound of carbon and oxygen such as CO or CO.sub.2, and oxygen gas also may be introduced to the growth zone.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 83:53274 USPATFULL
TI Control of atmosphere surrounding crystal growth zone
IN Wald, Fritz, Wayland, MA, United States
Kalejs, Juris P., Wellesley, MA, United States
PA Mobil Solar Energy Corporation, Waltham, MA, United States (U.S.

corporation)
PI US 4415401 19831115
AI US 1980-216300 19801215 (6)
RLI Continuation-in-part of Ser. No. US 1980-129075, filed on 10 Mar 1980, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Bernstein, Hiram H.
LREP Schiller & Pandiscio
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 894
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 11 OF 11 USPATFULL
AB In the production of silicon articles at an elevated temperature, a stream comprising a controlled mixture of an oxygen-containing first gas and a second gas is admitted to the processing chamber. The first gas is one which partially dissociates under the conditions in the chamber to form both oxygen and the second gas. The second gas is one which is not harmful to silicon at the conditions in the chamber. Substantially equilibrium conditions are established in the chamber so that the dissociation of the first gas to oxygen occurs reversibly. The partial pressure of oxygen (P.sub.O.sbsb.2) is sensed in the chamber during processing of the article. In response to the P.sub.O.sbsb.2 level, the ratio of the rates of flow of the oxygen-containing gas and the second gas is adjusted so as to maintain the P.sub.O.sbsb.2 at a level less than about 10.sup.-6 atmosphere, and usually no greater than about 10.sup.-10 atmosphere, at which the density of oxygen-related defects in the processed silicon article is acceptably low. Oxygen-related defects in the silicon are thereby reduced. If graphite structures are present in the hot zone of the processing chamber, they are preferably coated with an impervious coating which will stand the high temperature and will prevent the gas stream from coming into contact with the hot graphite. Carbon-related defects in the silicon are thereby also reduced.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AN 83:36852 USPATFULL
TI Control of oxygen- and carbon-related crystal defects in silicon processing
IN Ownby, Paul D., Rolla, MO, United States
Grayson, Paul E., Joplin, MO, United States
PA Eagle-Picher Industries, Inc., Cincinnati, OH, United States (U.S. corporation)
PI US 4400232 19830823
AI US 1981-319638 19811109 (6)
DT Utility
FS Granted
EXNAM Primary Examiner: Bernstein, Hiram H.
LREP Wood, Herron & Evans
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 386
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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L1         439960 S (SINGLE OR MONO)(8A)(CRYSTAL?)
L2         439960 S (SINGLE OR MONO)(8A)(CRYSTAL?)
L3         342517 S (COOL? OR REFRIGERAT?)(8A)(WATER)
L4          13032 S (PULL? OR LIFT?)(8A)(CRYSTAL?)
L5          61525 S (MEASUR? OR GAUGE OR DEMARCAT? OR DETERMIN? OR MARK?)(8A)(FLO
L6             11 S L1 AND L3 AND L4 AND L5

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